

Amendments to the Claims

1-39. (cancelled)

40. (new) An isolated DNA molecule comprising:

(a) DNA encoding an OmpA signal peptide;

(b) DNA encoding a peptide selected from the group consisting of tPA, a tPA variant, K2S, and a K2S variant;

(c) DNA encoding a peptide selected from the group consisting of SEGN (SEQ ID NO:9) and SEGNSD (SEQ ID NO:10);

wherein said DNA of (a) is located upstream of said DNA of (c), and said DNA of (b) is located downstream of said DNA of (c);

wherein said DNAs of (a), (b), and (c) are operably linked; and

wherein a prokaryotic host cell transformed with said DNA molecule secretes said tPA, tPA variant, K2S, or K2S variant, extracellularly as a thrombolytically active protein.

41. (new) The isolated DNA molecule of claim 40, wherein the OmpA signal peptide is encoded by the sequence of SEQ ID NO:3.

42. (new) The isolated DNA molecule of claim 40, wherein said DNA of (c) is TCTGAGGGAAAC (SEQ ID NO:20).

43. (new) The isolated DNA molecule of claim 40, wherein said DNA of (c) is
TCTGAGGGAAACAGTGAC (SEQ ID NO:1).

44. (new) The isolated DNA molecule of claim 40, wherein said DNA of (b)
encodes a tPA variant selected from the group consisting of:

- a) Finger domain (amino acids 4-50 of SEQ ID NO:19);
- b) Growth factor domain (amino acids 50-87 of SEQ ID NO:19);
- c) Kringle domain 1 (amino acids 86-176 of SEQ ID NO:19);
- d) Kringle domain 2 (amino acids 176-262 of SEQ ID NO:19); and
- e) Protease domain (amino acids 276-527 of SEQ ID NO:19).

45. (new) The isolated DNA molecule of claim 40, wherein said DNA of (b)
is SEQ ID NO:4.

46. (new) The isolated DNA molecule of claim 40, wherein said DNA of (b)
encodes a K2S variant selected from the group consisting of SEQ ID NO:11, SEQ ID
NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID
NO:17, and SEQ ID NO:18.

47. (new) The isolated DNA molecule of claim 40, wherein said DNA of (b)
encodes amino acids at least 90% identical to amino acids 87 - 527 of SEQ ID NO:19.

48. (new) The isolated DNA molecule of claim 40, wherein said DNA of (b)
encodes amino acids at least 90% identical to amino acids 174 - 527 of SEQ ID NO:19.

49. (new) The isolated DNA molecule of claim 40, wherein said DNA of (b) encodes amino acids at least 90% identical to amino acids 180 - 527 of SEQ ID NO:19.

50. (new) The isolated DNA molecule of claim 40, wherein said DNA of (b) encodes amino acids at least 90% identical to amino acids 220 - 527 of SEQ ID NO:19.

51. (new) The isolated DNA molecule of claim 40, wherein said DNA molecule of (b) hybridizes under stringent conditions to a DNA molecule consisting of SEQ ID NO:4, wherein the hybridization is carried out in 6x SSC, 5x Deinhardt's solution, and 0.1 SDS% at 65°C.

52. (new) A vector comprising the DNA molecule of claim 40.

53. (new) The vector of claim 52, further comprising the DNA sequence of a ribosome binding site and of the lac promoter.

54. (new) The vector of claim 53, further comprising the DNA sequence of the β lactamase gene.

55. (new) The vector of claim 54, further comprising the DNA sequence of the gpIII gene.

56. (new) The vector of claim 55, wherein the expression of the gpIII protein is suppressed or inhibited by deleting the DNA molecule encoding said gpIII protein or by a stop codon between the gene coding for the functional variant of tissue plasminogen activator protein and the gpIII protein.

57. (new) The vector of claim 52, wherein said vector comprises pComb3HSS.

58. (new) A prokaryotic host cell comprising the DNA molecule of claim 40.

59. (new) The host cell of claim 58, wherein said host cell is *E. coli*.

60. (new) A method of producing a vector comprising inserting the DNA molecule of claim 40 into a vector.